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## Subject summary

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8/5,K/1 (Item 1 from file: 2) Links

INSPEC

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10945453

Title: Secure data sharing in mobile environments

Author Matsunaka, T.; Warabino, T.; Kishi, Y.

Author Affiliation: KDDI R&D Labs. Inc., Saitama, Japan

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Treatment: Practical (P)

Abstract: This paper proposes an approach for secure data sharing on mobile terminals with members of a particular group. To avoid the data being compromised due to loss or theft, this approach prevents data leakage, while allowing the correct members to recover the data to a new mobile terminal thanks to cooperation between a mobile terminal and a network server. The fundamental concept used to achieve data security involves applying data encryption and secret sharing of the encryption key. In addition, this approach newly introduces a key encapsulation mechanism (KEM) and threshold cryptography. The approach also combines the use of a data protection approach, based on a secret sharing scheme, in order to achieve an efficient data reading process. Once one of the members reads the data, he/she need not use threshold cryptography to reconstruct the encrypted key, but instead uses a secret sharing scheme. This paper confirms the potential of this approach via the prototype implementation onto a mobile phone. (15 Refs)

Subfile: B C

Descriptors: cryptography; data encapsulation; mobile computing; mobile radio

Identifiers: secure data sharing; mobile environment; data leakage prevention; mobile terminal; network server; data encryption key encapsulation mechanism; secret sharing scheme; threshold cryptography; data protection approach; data reading process; mobile phone

Class Codes: B6250F (Mobile radio systems); B6120D (Cryptography); C6150N (Distributed systems software); C6130S (Data security)

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Abstract: This paper proposes an approach for secure data sharing on mobile terminals with members of a particular group. To avoid the data being compromised due to loss... ...prevents data leakage, while allowing the correct members to recover the data to a new mobile terminal thanks to cooperation between a mobile terminal and a network server. The fundamental concept used to achieve data security involves applying data encryption and secret sharing of the encryption key. In addition, this approach newly introduces a key encapsulation mechanism (KEM) and threshold cryptography. The approach also combines the use of a data protection approach, based on a secret sharing scheme, in order to achieve an efficient data reading process. Once one of the members reads the data, he/she need not use threshold cryptography to reconstruct the encrypted key, but instead uses a secret sharing scheme. This paper confirms the potential of this approach via the prototype implementation onto a mobile phone.

Identifiers: ...mobile terminal; ... ...secret sharing scheme... ...data protection approach... ...mobile phone Astronomical Objects:

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